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SECTION 013100 – ENVIRONMENT, SAFETY, AND HEALTH CONSTRUCTION REQUIREMENTS

PART 1 GENERAL

1.1 LABORATORY'S ES&H POLICY

A. At Fermilab, safety and environmental protection are of the highest importance. The Laboratory's policy is to protect the environment and the safety and health of all persons, may they be laboratory employees, subcontractor employees, scientific visitors, or visiting members of the public, from accident or injury while they are present on the Fermilab Site or other location managed by Fermilab. Nothing shall have a higher priority.

B. The Directorate's letter dated January 2016 entitled, "The Importance of Environment, Safety, Health and Quality" is included in this section and in addition, establishes the Laboratory's policy.

1.2 SUMMARY

A. This section describes the requirements, responsibilities and expectations for the environment, safety and health (ES&H) aspects of the project.

B. Safety, as used in this document, encompasses environment, safety, and health, including pollution prevention and waste minimization.

C. The Subcontractor shall provide all labor, materials, equipment, services, occupational exposure monitoring, and supervision required to maintain work sites that meet the ES&H requirements of all applicable federal, state, local and Fermilab's regulations. In addition, the Subcontractor shall protect the environment and the safety and health of its employees, the employees of its sub-subcontractors, sub-tier vendors, Fermilab's employees and the general public.

1.3 REFERENCES

A. The Subcontractor and sub-tiered contractors shall comply with the following reference documents. The publications referenced herein, form a part of this Section and Subcontract documents.

1. Fermilab ES&H Manual http://esh.fnal.gov/xms/ESHQ-Manuals/FESHM
2. 10 Code of Federal Regulations (CFR) 851, Department of Energy (DOE) Worker Safety and Health Program
3. 10 CFR 820, Procedural Rules for DOE Nuclear Activities
4. 10 CFR 835, Occupational Radiation Protection
5. 10 CFR 860, Trespass to Land Owned & Leased by the US Government
6. 10 CFR 708, DOE Contractor Employee Protection Program
7. 29 CFR 1904, Record Keeping Guidelines for Occupational Injuries and Illnesses
8. 29 CFR, 1910, Occupational Safety and Health General Industry Standards
9. 29 CFR 1926, Occupational Safety and Health Standards for Construction
10. 40 CFR Protection of the Environment (USA EPA)

11. 35 IAC Illinois Environmental Protection (Illinois EPA)
12. DOE Order 442.1A, Department of Energy Employee Concerns Program
13. National Fire Protection Association (NFPA) codes and standards which include but are not limited to:
14. NFPA 70E, Standard for Electrical Safety in the Workplace (2009)
15. American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices"
16. American Society of Mechanical Engineers (ASME) Codes and Standards, which include but are not limited to:
    a. ASME B30 Series, Crane Safety
    b. ASME B31 Standards of Pressure Piping
17. American National Standards Institute (ANSI) Standards, which include but are not limited to:
    a. ANSI A10, Construction Package
    b. ANSI Z136.1 Safe Use of Ladders

B. Subcontractor(s) working on Fermilab site are subject to DOE civil penalties or subcontract fee reductions for noncompliance, in accordance with 10 CFR 851 "Worker Safety and Health Program" and 10 CFR 835 "Occupational Radiation Protection". Subcontractor(s) shall also comply with 10 CFR 851 "Worker Safety and Health Program" which defines worker safety and health requirements for the Department of Energy contractors and their subcontractors. The Worker Safety and Health Program acknowledgment is part of the Construction ES&H Plan. Additional information can be found at: http://esh.fnal.gov/xms/Subcontractor-Safety.

C. Subcontractor shall comply with 10 CFR 835 "Occupational Radiation Protection". This Regulation defines the requirements pertinent to work where potential exposure to ionizing radiation hazards occur. The protective measures to be taken where this hazard is present shall be communicated to the Subcontractor through the Fermilab Construction Coordinator. Fermilab has an extensive level of expertise in management of ionizing radiation hazards that will be utilized to identify the work locations where such hazards are present and establish these protective measures.

D. The publications listed below form a part of this specification to the extent referenced.
    1. 001100 Subcontract General Provisions
    2. 001200 Construction Subcontract Terms and Conditions
    3. 010010 General Requirements

1.4 DEFINITIONS

A. Competent Person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate the identified hazardous. Fermilab also requires the Subcontractor Competent Person to have completed an OSHA 30-hour construction safety course, or equivalent. Duties related to ES&H shall take precedence over other duties.

B. Construction: The combination of erection, installation, assembly, demolition, or fabrication activities involved to create a new facility or to alter, add to, rehabilitate, dismantle, or remove an existing facility. It also includes the alteration and repair

(including dredging, excavating, and painting) of buildings, structures, or other real property, as well as any construction, demolition, and excavation activities conducted as part of environmental restoration or remediation efforts.

C. Construction Coordinator: A Fermilab person responsible for ensuring the work being performed is in conformance to the subcontract technical requirements. The Fermilab Construction Coordinator is the primary point of contact with the Subcontractor.

D. Construction Environmental Safety & Health Plan: An official, binding document prepared by the Subcontractor, bearing the signature of a responsible manager of the subcontracting company that defines the safety and health practices and responsibilities necessary to conduct operations on Fermilab property in a safe manner.

E. Construction (Project) Manager: A Fermilab person with overall responsibility for the construction phase of the project.

F. Construction Management Office: An office comprising of a Construction (Project) Manager, Construction Coordinator, Procurement Administrator, and ES&H Safety Coordinator. This office is responsible for supervising and administrating the construction project to ensure the construction subcontractor's compliance with technical specifications and ES&H requirements. An office member will serve as the primary liaison between the Subcontractor and Fermilab, and this office member is the designated Construction Coordinator.

G. Construction Worksite: The area within the limits necessary to perform the work described in this Subcontract. Reference Section **010010** Site Location, Site Access and Hauling, & Parking and Staging.

H. Design Coordinator: A Fermilab person who is assigned to the project and works with the Construction (Project) Manager and Construction Coordinator to assist in the technical coordination of the project.

I. ES&H Coordinator: A Fermilab person responsible for ES&H guidance, periodic construction site visits, support for the Fermilab Construction Coordinator, and provide oversight of the Subcontractor's safety program. The ES&H Coordinator will review Hazard Analysis and training documentation for on-going work activities. Any deficiencies noted shall be brought to the attention of the Fermilab Construction Coordinator for follow up with the Subcontractor. The ES&H Coordinator has authority to stop work activities for imminent danger, fatality, or major environmental release, but does not have authority to direct changes in the work scope of the project or the Subcontractor's means and methods of construction.

J. Imminent Danger: A hazard which, if allowed to persist, is likely to cause an accident that will result in death, injury, property damage, or environmental impairment.

K. Integrated Safety Management (ISM): ISM is defined as a system for performing work safely and in an environmentally responsible manner. The term "integrated" is used to indicate that the Environment, Safety and Health (ES&H) management systems are normal and natural elements of accomplishing work. The intent is to integrate the management of ES&H with the management of the other primary elements of construction: quality, scope, cost, and schedule. Fermilab subscribes to the philosophy

of Integrated Safety Management (ISM) by following the program outlined in this section. The ISM core functions are implemented by robust daily work planning of construction activities. The ISM core functions include 1) define the scope of work, 2) identify and analyze the hazards, 3) develop and implement hazard controls, 4) perform work with controls, and 5) provide feedback for continuous improvement. Fermilab also requires this of subcontractors and sub-tier subcontractors.

L. Procurement Administrator: A Fermilab person responsible for and specifically assigned to the project, who is responsible for negotiating and administering the subcontract terms and conditions. All modifications to the subcontract shall come from the Procurement Administrator or designee, in writing. The Procurement Administrator or designee is the sole entity that can modify the subcontract or initiate change orders.

M. Qualified Person: One who, by possession of a recognized degree, certification, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project.

N. Subcontractor's Safety Officer/Representative: If required by Section **010010**, the Subcontractor's Safety Representative shall have completed the OSHA 30 hour construction safety course and have a minimum of 10 years of construction experience consistent with the type of activities included in the scope of work.

O. Subcontractor's ES&H Program: Subcontractor's (corporate) company policies and procedures to ensure operations comply with applicable safety and occupational health laws and regulations, and protect the safety and health of employees and members of the public.

P. Stop-Work Order: A definitive statement made openly to another individual that an imminent danger situation exists and thus all related work must stop immediately.

1.5 SUBMITTALS

A. Submittals with Subcontractor's proposal:
   1. Construction Environmental Safety and Health Plan, Part 1 that includes acknowledgement regarding Worker Safety 10 CFR 851;
   2. Experience Modification Rating (EMR) Rates and Occupational Safety Health Administration (OSHA) 300 log for last three years. Reference the Fermilab Subcontractor Safety Information Questionnaire;
   3. Subcontractor's ES&H Program (if required by Article 1.9); and
   4. If required by Section **010010**, Resume' of the Subcontractor's Safety Representative

B. ES&H Submittals Required Prior to Notice to Proceed but not limited to. Within ten (10) business days after subcontract award, the Subcontractor shall submit the following to Fermilab for acceptance. These items must be submitted and accepted by Fermilab prior issuance of Notice-To-Proceed (NTP):
   1. Hazard Analysis (if NTP is waived, a project Hazard Analysis is still required prior to commencement of work);

C. Submittals after Notice To Proceed include, if applicable:

1. The completed Construction Environmental Safety & Health Plan
2. Individual Trade, Craft, or Task Specific Hazard Analysis
3. Material Safety Data Sheets (MSDS) and/or Global Harmonizing System, Safety Data Sheets (SDS)
4. Tabulation of On-site Work Hours on a Weekly basis as part of Weekly Progress Meetings
5. Incident Investigation Reports
6. Lift Plans
7. Welding Plans
8. Environmental, Erosion Control Reports; and
9. Excavation Plans, etc.

1.6 STOP WORK AUTHORITY

A. Any Fermilab employee or Subcontract employee has the authority to stop a work activity if there is imminent danger or major environmental release. If the hazard cannot be abated in a timely manner, the work activity shall be stopped through the use of a Stop Work Order by the Fermilab Construction Coordinator or the Fermilab Procurement Administrator.

B. Work shall not be permitted to continue until the hazardous situation has been eliminated and Fermilab has issued a Restart Work Order.

C. The Subcontractor is solely responsible for safe working methods, Subcontractor shall ensure that Subcontractor's employees, sub tier subcontractor employees, Fermilab workers and other personnel or visitors are not exposed to safety hazards inside their designated work sites.

D. if unsafe behavior is observed, any Fermilab worker shall stop the task activity, inform the Construction Coordinator and Subcontractor's Field Superintendent, and refer the worker(s) to the Fermilab approved Construction ES&H Plan (CESHP), Hazard Analysis (HA), and/or 10 CFR 851 regulations, or the appropriate project documents (for example, the HA) for the violation.

1.7 ENFORCEMENT

A. The US Department of Energy has the authority to exercise enforcement actions on any subcontractor who violates any requirement set forth in 10 CFR 851 and 10 CFR 835. The subcontractor may be subject to civil penalties up to $80,000 for each such violation, in accordance with 10 CFR 851 and civil penalties up to $110,000 for each such violation, in accordance with 10 CFR 835.

B. If any violation is a continuous violation, each day of the violation shall constitute a separate violation for the purpose of computing the civil penalty.

1.8 CONSTRUCTION ES&H PLAN

A. In accordance with 10 CFR 851 the Subcontractor shall submit a written project Construction ES&H Plan encompassing all pertinent aspects of the Subcontractor's ES&H Program and addressing how the requirements of this specification section will be

implemented. The Construction ES&H Plan shall include site-specific information of the Subcontractor's activities for this project.

B. Part 1 of the Construction ES&H (CESH) Plan shall be submitted with the Subcontractor proposal and reviewed by Fermilab prior to the award of the subcontract.

C. The CESH Plan shall encompass the work of any and all lower-tier subcontractors involved in activities under this Subcontract, and it shall include the Subcontractor's methods to enforce the elements of the Safety Program for all personnel on the construction worksite.
    1. The Subcontractor's CESH Plan (see Attachment C) shall include the following, at a minimum:
        a. A statement of the subcontractor's commitment to provide a safe and healthful construction worksite for all employees including Subcontractors' employees and Fermilab personnel;
        b. A signature of a responsible manager of the subcontracting company;
        c. If required by Section **010010** provide Name, title and qualifications of the designated Site Safety and Health Representative and designated alternates;
        d. Documented evidence of Off-Site Training for the Site Environment, Safety and Health Representative;
        e. Occupational Medicine Program, including identifying the qualified occupational medicine services provider;
        f. Description of the inspections performed by the Subcontractor (frequency and format for documentation of inspections);
        g. Procedures for coordinating safety and health with lower-tier subcontractors and with Fermilab personnel on the construction worksite;
        h. Procedures for communicating and coordinating safety and health requirements to non-English speaking subcontractor personnel;
        i. Preliminary assessment of hazards and a list of the activity hazard analyses that will be performed for the project;
        j. Description of activity hazard analysis process, including:
            1) How workers are informed of hazards and protective actions; and
            2) How workers will acknowledge being provided the information;
        k. A disciplinary process for non-compliance with protective measures identified in the HA;
        l. How objective evidence (i.e. Industrial Hygiene (IH) exposure monitoring results) is to be used for establishing control measures, including exposure assessments to verify adequacy of control, if necessary as dictated by the hazards expected to be encountered;
        m. Identify safety and health training requirements and procedures including but not limited to:
            1) New Worker Orientation shall occur prior to beginning work on the construction worksite; and
            2) Each worker acknowledging work hazards;
        n. Frequency of tool-box safety meetings;

o. Updates or changes on safety practices relevant to the construction worksite, discussions how corrective actions and lessons learned from incidents at the construction worksite and elsewhere will be incorporated into the project's Safety Program.

D. The Subcontractor's incident reporting and occupational medical program and the specifics for the construction worksite shall include:
   1. Identification of the activities on the construction worksite that will require employees to be under an occupational medical or exposure-monitoring program. Upon Fermilab's request, the Subcontractor shall submit documentation of compliance.
   2. Discussion of how medical personnel will be made available for advice and consultation on matters of occupational health.
   3. An emergency response plan that sets forth the procedures to be followed upon the occurrence of serious injuries, illnesses, fatalities, fires, structural failures, or other emergencies, including procedures for the administration of first aid and/or other necessary medical treatment including:
      a. Identified of provision for prompt medical treatment.
      b. Process for reporting and investigating recordable injuries for possible cause and corrective action in accordance with 10 CFR 1904.
      c. Specific designation of management persons responsible for reviewing injury and illness reports.
   4. Procedures for recording and reporting safety incidents and maintaining safety and health records in accordance with Occupational Safety and Health Administration (OSHA) requirements and in accordance with Article 3.3.
      a. Procedures for the investigation of job-related incidents to determine possible cause and corrective action.
      b. Specific designation of management persons responsible for review of injury and illness reports

1.9 SUBCONTRACTOR'S ENVIRONMENT, SAFETY, AND HEALTH PROGRAM

A. The Subcontractor shall have an effective Environment, Safety and Health (ES&H) program (corporate safety manual) incorporating the philosophy of Integrated Safety Management (ISM). It shall be submitted to the Fermilab Procurement Administrator prior to Notice to Proceed.

B. On all subcontracts that require performance bonding, the Subcontractor shall have an ES&H Program that is commensurate with the complexity and nature of the work. This ES&H Program will describe the Subcontractor's overall commitment to safety and measures that will be taken specific to this project work scope and site. The following describes the ES&H Program requirements.
   1. The Subcontractor shall submit to Fermilab one (1) printed copy and one (1) electronic copy in Adobe portable document format (PDF);
   2. The ES&H Program will address the Subcontractor's commitment to each of the following ISM principals. A brief explanation and key elements to be addressed follows each:
      a. Line Management Responsibility for Safety: Line management shall be responsible and accountable for the protection of the employees,

the public, and the environment. Examples of expected items to support this statement are:

1) Statement of ES&H policy and goals;
2) Workforce accountability for strict compliance with subcontractor's ES&H program;
3) Policy statement concerning substance abuse on the construction worksite;
4) Process for progressive discipline;
5) Means of holding sub-tier contractors accountable for compliance with ES&H requirements;
6) Evidence of worker participation;
7) Participation of management in safety meetings, inspection, and documentation;
8) Process for employees to identify and help resolve ES&H issues quickly, including stop work authority; and
9) Management support without hint of retribution or harassment.
10) On-going status and compliance verification reporting to Fermilab.

b. Clear Roles and Responsibilities: The roles and responsibilities, and authority at all levels of the organization, including potential sub-tier subcontractors are clearly identified. Examples of expected items to support this statement are:

1) ES&H and Quality Control (QC) responsibilities for principals, field superintendent, foremen, competent person, ES&H officer, and workforce are documented; and
2) Stop work authority.

c. Competence Commensurate with Responsibility: Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. Examples of expected items to support this statement are:

1) Identification of required training and experience of field superintendent, foremen, competent person, ES&H personnel, and workforce;
2) Identification of process for documenting completion of training;
3) Process for assuring sub-tier contractors are adequately skilled to perform their work activities; and
4) Training for employees and sub-tiers employees on Integrated Safety Management and hazard analysis.

d. Balanced Priorities: Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned and performed. Examples of expected items to support this statement are:

1) Management commitment of resources to adequately implement their ES&H program;
2) Selection process for sub-tier contractors that include cost, quality, schedule adherence, and safety performance; and
3) Process for the Subcontractor to authorize start of work by sub-tier contractors.

e. Identification of Safety Standards and Requirements: Before work commences, the associated hazards are evaluated and an agreed upon set of safety standards and requirements are established which will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences. Examples of expected items to support this statement are:
   1) Subcontractor ES&H Program Plan, by reference;
   2) Subcontractor QC Program Plan, by reference; and
   3) Hazard analysis process which includes defining scope of work, analysis of hazards, identification of hazard controls, requirement to perform work within these controls, and means to provide feedback and improvement.

f. Hazard Controls Tailored to Work Being Performed: Administrative and engineering controls, tailored to the work being performed, are present to prevent and mitigate hazards. Examples of expected items to support this statement are:
   1) Hazard analysis process;
   2) Subcontractor ES&H Program Plan, by reference;
   3) Planning and selection of appropriate and effective protective measures;
   4) Active regimen of workplace inspections and prompt abatement of identified hazards; and
   5) Occupational exposure (industrial hygiene) monitoring to verify adequacy of controls and compliance with occupational exposure limits;
   6) Inspections, assessment, and audits of sub-tier contractor's adherence to ES&H and QC program; and
   7) Daily work planning and hazard reviews at the worker level documented in form found in Attachment B.

g. Operations Authorization: The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and understood by all. Examples of expected items to support this statement are:
   1) Process to assure workers are informed of hazards and required protective measures before work is allowed to begin;
   2) Process to assure workers, including sub-tier contractors are appropriately trained to do their job safely;
   3) Process to assure that when an incident occurs, the scene is secured until the incident investigation is complete; and
   4) Investigation process includes analysis, examination of trends and lessons learned, and a means to report to Fermilab in a timely manner.
   5) Process to assure that applicable Fermilab permits are in place prior to allowing work to commence.

C. The ES&H Program should describe the following:
   1. Basic Safety And Health Provisions including Emergency Action/Response Plan, Accident Investigation Program, Recording and Reporting of Injuries, Housekeeping, Hazard Communication Plan, Personal Protective Equipment and Fire Protection and Prevention.

2. Hazard Analysis Process including how hazards are identified and analyzed, preventive controls and the periodic inspection program. How workers are informed of hazards and protective actions. How objective evidence, i.e., monitoring results, is to be used for establishing controls measure, including exposures assessments to verify adequacy of control, e.g., verifying adequacy of hearing protection while monitoring equipment noise that is expected to be greater than 85dba exposure.
3. Waste Handling and Disposal including characterization of waste, packaging and labeling requirements and assurance that appropriate transportation and handling facilities will be used;
4. Erosion Control and Environmental Protection including Storm Water Pollution Prevention Plan (SWPPP) when required and Erosion/Sediment Control Plan(s);
5. Other Programs (as dictated by the scope of this work) including the following:
    a. Control of Hazardous Energy (Lockout/Tagout);
    b. Confined Space;
    c. Concrete Cutting;
    d. Hearing Conservation;
    e. Ionizing Radiation;
    f. Nonionizing Radiation;
    g. Lead, Beryllium, or Other Metals;
    h. Electrical (including Power Transmission and Distribution);
    i. Welding and Cutting;
    j. Scaffolds;
    k. Fall Protection;
    l. Excavations;
    m. Signs, Signals, And, Barricades;
    n. Tools - Hand and Power;
    o. Ladders & Stairways;
    p. Commercial Diving Operations;
    q. Motor Vehicles, Mechanized Equipment, and Marine Operations;
    r. Cranes, Derricks, Hoists, Elevators, and Conveyors;
    s. Concrete and Masonry Construction;
    t. Steel Erection;
    u. Underground Construction, Caissons, Cofferdams, & Compressed Air
    v. Demolition; and
    w. Blasting and the Use of Explosives

D. Changes and Updates: The ES&H Program is a living program. Updates that reflect changes to processes and program shall be submitted as changes are made. Fermilab may require changes for the program acceptance prior to Subcontract award. Once accepted by Fermilab, the Subcontractor shall be required to comply with the requirements set forth in their program.

E. All sub-tier subcontractors employed by the Subcontractor must agree in writing to follow the Subcontractor's ES&H Program. If not, the Sub-tier subcontractor's will submit for acceptance one (1) electronic version in Adobe portable document format (pdf) of their ES&H Program and provide their own CESHP acknowledging the 10 CFR 851, reference paragraphs 1.3, B and Article 1.8.

1.10 JOB SITE ORIENTATION

A. The Subcontractor shall ensure and demonstrate; through a documented job site orientation program that sub-tier subcontractor personnel are aware of the ES&H requirements of the job.

B. The Sub-tier subcontractors working for the Subcontractor shall follow and perform all required ES&H programs defined by the Subcontractor's approved and accepted ES&H program for the job site.

1.11 HAZARD ANALYSIS

A. The hazard analysis document details the specific hazards associated with the work activities and mitigating actions (including personal protective equipment) that the Subcontractor and Sub-tier subcontractors will take to reduce or eliminate the risk of injury.

B. The initial hazard analysis shall be submitted as part of the CESHP and accepted by Fermilab prior to notice to proceed (NTP).

C. As the project progresses, task specific hazard analysis shall be prepared and submitted. The Subcontractor shall prepare a hazard analysis for all trade work. A link to Fermilab's hazard analysis can be found at http://esh.fnal.gov/xms/Subcontractor-Safety. The Fermilab format shall be used unless otherwise approved, see attachment D.

D. The following criteria shall be addressed, if applicable, when developing the hazard analysis:
   1. A Fermilab accepted hazard analysis shall be required for all work activities;
   2. All subcontractor and sub tier subcontractor employees are required to sign the analyses affecting their work thereby acknowledging understanding of the hazards and the mitigation activities. The signature list shall be available for review by the Fermilab Construction Management Office. As the HA is updated, the subcontractor and sub-tier subcontractor employees shall be advised of the new information and re-sign the document;
   3. Prior to the start of subsequent new work activities, the Subcontractor shall review and revise the hazard analysis, or develop a new hazard analysis, as necessary to incorporate new hazards. Each revision must be submitted and accepted by Fermilab before the associated element of work is begun;
   4. Material Safety Data Sheets (MSDS) or Safety Data Sheet (SDS) of products that may significantly impact the safety or environment of Fermilab or subcontractor personnel are to be submitted as part of the hazard analysis process;
   5. The name of Competent Persons shall be included on the hazard analysis and communicated to all affected workforces;
   6. Specific procedures in the areas of fall protection, excavation, confined space, hoisting and rigging, and Lockout/Tagout may be required as job conditions dictate; and
   7. Identifying silica exposure such as cutting masonry products, installing, cutting, or removing concrete, installation of or removal of sheet rock

compound or dealing with other silica constraining products. Reference Attachment A for recommended mitigations.

E. The Fermilab Construction Management Office will provide informal hazard analysis training for Subcontractor and sub-tier contractor personnel upon request.

1.12 EXISTING UTILITIES, EQUIPMENT, AND STRUCTURES

A. Utility Identification and Location:
   1. Structures and utilities shown on the drawings represent the best information available. Their number and exact locations are not guaranteed. Excavation during construction may reveal the presence of underground drainage tiles, culverts, utilities, and other obstructions. The Subcontractor shall request from Fermilab direction for rerouting, sealing or otherwise modifying underground obstructions not shown on the drawings.
   2. The Subcontractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this subcontract. The Subcontractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during subcontract performance, or by the careless operation of equipment, or by workmen, the Subcontractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by Fermilab.
   3. The Subcontractor shall protect from damage all existing infrastructure (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Subcontractor. The Subcontractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this subcontract or failure to exercise reasonable care in performing the work. If the Subcontractor fails or refuses to repair the damage promptly, Fermilab may have the necessary work performed and charge the cost to the Subcontractor.
   4. Electrical cables, ductbanks, fiber optic cables, and gas service in the area of the excavation, that is, 18 inches either side or crossing, must be de-energized/de-pressured and lock-out/tagged-out. If the services cannot be de-energized/de-pressured, then vacuum excavation methods, consisting of air or water to break up the soil and a vacuum device to collect the spoil, shall be used to locate fiber optic cables, electrical cables, ductbanks, and gas lines prior to the excavation activity.

B. Work on Existing Utilities:
   1. Fermilab will identify through drawings, notations and field locates, the approximate location of known utilities and underground structures;
   2. No work shall be performed on existing in-service utility systems without prior approval and coordination of the system outage by the Fermilab Construction Coordinator;
   3. Pressure shall be relieved on all piping systems before opening system and starting the work;

4. Lockout/Tagout shall be used by the Subcontractor for all valves, blank-offs and relief lines;
5. “Hot Tap” connections on utility services shall not be permitted unless specified by the subcontract documents and specific procedures have been submitted to and accepted by Fermilab.
6. Existing fire and life safety systems shall be re-activated at the end of each business work day. If systems are unable to be re-activated at the end of the business work day, notification must be made to the Fermilab Construction Coordinator.

C. Fermilab Access for Information Gathering:
   1. Fermilab utilizes a GPS system for on-site mapping and documentation of underground utilities;
   2. The Subcontractor shall provide access for data gathering;
   3. The Subcontractor shall notify the Fermilab Construction Coordinator two (2) working days prior to backfilling.

1.13 ENVIRONMENTAL ISSUES AFFECTING THE WORK

A. Environmental issues affecting the work planning specific to this project can be found in Section **010010**.

B. Soil Erosion and Sediment Control shall be employed on all projects involving excavations, the following requirements apply:
   1. Subcontractor shall have all required erosion control devices required by the Soil Erosion Sediment Control Plan (SESCP) or SWPPP (if required) and as shown on the drawings, in place prior to commencing any work for which they are required.
      a. As the work evolves, additional interim control structures may be required in order to protect waterways and/or comply with permit terms and conditions.
      b. Costs for installation and maintenance of these structures shall be considered incidental to the project and included in the original proposal.
      c. The Subcontractor shall install all such structures within 24 hours of notification by Fermilab.
   2. Maintenance of Erosion Control Structures:
      a. Subcontractor shall be required to perform inspections of all control structures as specified in the drawings and SWPPP, and to maintain all control devices until final stabilization of all disturbed areas.
      b. Subcontractor shall perform at a minimum, weekly erosion control inspections and after ½-inch or more precipitation events.
   3. Temporary and Permanent Seeding and Stabilization
      a. The Subcontractor shall be required to follow seeding dates and requirements as specified and in accordance to the Illinois Urban Manual.
      b. The Subcontractor shall be responsible for providing appropriately vegetated surfaces as outlined in the technical specifications or specified on the drawings.
      c. The Subcontractor shall be responsible for establishing sufficient final vegetation required for stabilization as accepted by Fermilab to

removing the erosion control structures. Any permanent seeding operations completed at the end of the growing season shall be carried out per dormant seeding requirements (Illinois Urban Manual Standard 880C). Subcontractor shall be responsible for establishing final vegetation over all disturbed areas.

1.14 ADVANCE NOTICE OF WORK ACTIVITIES

A. The following activities require the Subcontractor to provide written notification to the Fermilab Construction Coordinator a minimum of three (3) business days prior to the commencement of work:
   1. Interruption of road traffic;
   2. Closure of any roads;
   3. Connection to or interruption of any existing underground utility;
   4. Intended use of ICW from any hydrant;
   5. Connection to temporary electric power sources;
   6. Request for disablement of fire alarms or related safety devices;
   7. Request for disablement of fire protection systems;
   8. Intended activity beyond the specified construction limits;
   9. Intended access to or work within a confined space;
   10. Connection to or interruption of any existing 13.8kV power system;
   11. Saw cutting or core drilling at manholes, foundations and paved areas;
   12. Excavation activities;
   13. Backfilling of underground utilities;
   14. Delivery of a radioactive source on the Fermilab site.

B. Subcontractor must receive Fermilab's approval prior to proceeding on the above listed work activities.

1.15 SUBCONTRACTOR'S PROJECT TEAM

A. Field Superintendent - The Subcontractor shall, at all times during the progress of the work, provide a competent superintendent. In addition, the following requirements for the Field Superintendent are described below:
   1. The Subcontractor shall provide a competent Field Superintendent, who is the Subcontractor's representative designated for the duration of the project to the running of the day-to-day operations of the work including safety, quality control and sub-tier subcontractor coordination responsibilities.
   2. The Field Superintendent shall have knowledge and experience of Occupational Safety and Health Administration (OSHA) and other related safety standards, and has the authority to enforce such standards in the field.
   3. The Field Superintendent must be present on the Fermilab project site whenever work activities are ongoing.
   4. In the absence of the designated Field Superintendent, the Subcontractor shall identify an alternate individual with similar qualifications acceptable to Fermilab.
   5. Should more than one work shift be required on this project, the Subcontractor shall identify and assign a designated individual meeting the above requirements for each work shift.

6. In the event that excavations are part of the project scope, the Subcontractor shall provide a competent person for excavation activities who meets the requirements of OSHA 29 CFR 1926.32 (f).
7. In the event that scaffolding is be utilized during the execution of the project, the Subcontractor shall provide a competent person for scaffolding who meets the requirements of OSHA 29 CFR 1926.32 (f).

B. Subcontractor's Safety Representative - If a Subcontractor's Safety Representative is required, the Subcontractor shall employ a Safety Representative who acts as the authorized agent of the Subcontractor, responsible for safety activities of all work sites under this subcontract. Reference Section **010010.**

C. The Subcontractor's Field Representative or if required by Section **010010** the Subcontractor's Safety Representative as identified in the CESHP shall interface with the Fermilab Construction Coordinator and Fermilab ESH Coordinator on all safety matters, and assure the subcontractor does the following:
1. Act as the Competent Person
2. Provide Input to Daily Task/Work Planning Meeting
3. Interface with Fermilab Construction Coordinator on all safety matters;
4. Prepare and submit Hazard Analyses including revisions and updates;
5. Review and accept sub-tier safety plans and hazard analyses;
6. Assure that all sub-tier contractors have accepted the ES&H Plan;
7. Update the ES&H Plan as required;
8. Maintain a list of Competent and Qualified Persons;
9. Assure that Hazard Analyses are understood and signed by all workers;
10. Inspect work in progress;
11. Identify and reports and corrects deficiencies;
12. Assure that personal protective equipment is available;
13. Conducts tool box meetings;
14. Conducts monthly safety meetings;
15. Maintain all safety records including minutes, training records, inspections, etc.
16. Maintain safety related signage;
17. Assure that equipment inspections are performed;
18. Attend weekly construction meetings;
19. Coordinate permit applications with Fermilab Construction Coordinator;
20. Investigates all incidents.

D. The Subcontractor's Safety Representative or the alternate shall be present at all meetings between the Subcontractor and Fermilab at which changes in construction methodology are discussed. The Subcontractor's Safety Representative shall approve these changes.

1.16 IDENTIFICATION BADGING

A. The Subcontractor employees and sub-tier Subcontractor will be required to obtain identification badging for access onto the Fermilab site, unless otherwise stated in Section **010010.**
1. The Fermilab Construction Coordinator will assist in the process of identification badging;

2. Once identification badges are obtained, they shall be available at all times while on and entering the Fermilab site; and
3. Deliveries, incidentals, and escorted work activities under eight (8) hours are exempted from the badging requirement.

1.17 FERMILAB TRAINING

A. All Subcontractors working at Fermilab shall attend Subcontractor Orientation which is a half-hour presentation conducted weekdays at 7:30 a.m. All Subcontractor employees will receive a card documenting attendance. This training must be repeated every two (2) years. The orientation and badging efforts require approximately one (1) hour.

B. Fermilab may require that Subcontractor employees receive General Employee Radiological Worker training, approximately one (1) hour class or Radiological Worker training, an approximately eight (8) hour class. Refer to Section **010010** to determine if this class is required.

C. Fermilab may require that Subcontractor employees receive Oxygen Deficiency Hazard (ODH) training, an approximately eight (8) hour class. This include a medical evaluation by Fermilab Occupational medical department. Refer to Section **010010** to determine if this class is required.

D. Fermilab may require that Subcontractor employees receive Fermilab LOTO II, a 4 hour class. Refer to Section **010010** to determine if this class is required.

1.18 WASTE DISPOSAL/RECYCLING

A. No trash burning, dumping, or disposal is permitted on Fermilab property. The disposal of regulated waste generated from the use of materials provided by Fermilab (Government property) shall be the responsibility of the designated Fermilab representative. Disposal of all other trash and waste materials generated during the performance of this subcontract shall be the responsibility of the Subcontractor and must be performed in compliance with all applicable federal, state and local laws and regulations.

B. The governing statutes include, but are not limited to, the Resource Conservation and Recovery Act, the Toxic Substances Control Act, the Hazardous Materials Transportation Act, the Illinois Environmental Protection Act/Solid and Special Waste Management Regulations, and the laws and regulations of any other state receiving regulated waste material generated during the performance of this Subcontract.

C. Fermilab remains subject to a DOE-wide suspension of recycling metal originating from radiological areas. Refer to Section **010010** for requirements pertaining to recycling metals. Off-site disposal of recycled materials, trash, debris, demolished material, pallets, crates, packing materials, rubbish and all waste material shall be the responsibility of the Subcontractor. The goal for recycling construction and demolition waste is 80% based on weight, excluding metals restricted in Section **010010**.

D. Every subcontractor’s recycled or waste dumpster(s) leaving site must have a radiological survey. Coordinate with the Fermilab Construction Coordinator for this survey prior to dumpster removal.

E. The Subcontractor shall furnish all necessary dumpsters or containers to prevent dispersion of debris both within and outside of the construction site.

F. Fermilab Approved Recycling:
   1. The Subcontractor shall utilize a recycling waste hauler, obtain a report on percentage recycled by weight from the vendor and submit the report to the Fermilab Construction Coordinator;
   2. The minimum amount of recycled material is 50% as measured by weight excluding metals restricted by above in paragraph B.
   3. The Subcontractor shall submit a report that details the percentage, by weight, of recycled materials.

G. Regulated Waste:
   1. Where regulated waste is generated (waste regulated by the Resource Conservation and Recovery Act Hazardous, Toxic Substances Control Act, Illinois Special Waste, etc.) the Subcontractor shall immediately notify the Fermilab Construction Coordinator; and
   2. Unless specified above in paragraph B, all regulated waste shall be disposed through the Fermilab Hazard Control Technology Team.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 PERMITS

A. Fermilab has its own Authority Having Jurisdiction. No municipality permits are required. However, Fermilab conducts work through the use of on-site permits. All Fermilab required permits will be identified to the Subcontractor by the Fermilab Construction Coordinator, who will arrange for all necessary permits at no cost to the Subcontractor.

B. No work activity shall be performed without the required permits.

C. Activities requiring permits include, but are not limited to:
   1. Work notification;
   2. Excavation (see below);
   3. Electrical work;
   4. Existing Structure/Concrete Cutting & Coring
   5. Burning/Welding & Spark Producing;
   6. Modification to drinking water or sanitary sewer systems;
   7. Radioactive sources on site;
   8. Working with/on radioactive material, working in radiological areas;
   9. Moving government or Fermilab property off site.

D. The Subcontractor shall comply with all restrictions or provisions listed on permits.

E. All requests for permits shall be made a minimum of two (2) working days prior to the need for the permit, except excavation permit.

F. Excavation Permit: An Excavation Permit issued by Fermilab via the Fermilab Construction Coordinator is required before any excavation/digging can begin at the construction site. The following requirements are associated with the Excavation Permit:
   1. Subcontractor shall coordinate the preparation of the excavation permit application with the Fermilab Construction Coordinator;
   2. Excavation permits may require a minimum of ten (10) working days to process;
   3. No excavation shall proceed without an approved Excavation Permit, signed by the Subcontractor Competent Person and the Fermilab Construction Coordinator.

G. Confined Space Permit: The minimum acceptable requirements for confined space work at Fermilab include:
   1. The Fermilab Construction Coordinator shall identify all existing confined work spaces to the Subcontractor;
   2. If a Subcontractor is required to enter a permit-required confined space as part of their contract with Fermilab, the subcontractor shall provide the Fermilab Construction Coordinator with the following information at the pre-construction meeting or at least five (5) working days prior to entry:
      a. A written copy of the Subcontractor's confined space entry program;
      b. Training records for potential entrants, attendants, and entry supervisors;
      c. Evidence that all air monitoring equipment is properly calibrated within the calibration period specified by the subcontractor's program or manufacturer's instructions. This may be in the form of a calibration log, certification indicator on the instrument, or other means. (It is imperative that the equipment used by the Subcontractor be capable of monitoring for the contaminants associated with the confined space to be entered.
   3. It will be the Subcontractor's responsibility to provide all of their own personal protective equipment (PPE), such as lifelines, harnesses, respirators, tripods, ventilators, etc., as specified by the entry permit;
   4. In addition to complying with the permit space requirements listed above, each Subcontractor retained to perform permit-required confined space entry operations shall:
      a. Obtain any available information regarding permit space hazards and entry operations from the Fermilab Construction Coordinator;
      b. Coordinate entry operations with Fermilab, when both Fermilab personnel and Subcontractor personnel will be working in or near permit spaces;
      c. Prior to entry, inform the Fermilab Construction Coordinator of the specific permit space procedures the Subcontractor will follow;
      d. Inform the Fermilab Construction Coordinator who will inform the Fermilab Fire Department prior to entering the space;
      e. Inform the Fermilab Construction Coordinator of any unanticipated hazards encountered during confined space entry;
      f. Provide the Fermilab Construction Coordinator with a copy of the Subcontractor's confined space permit, reclassification form or written certification once the work has been completed.

H. Burning, Welding, including Spark Producing around Combustibles Permit:

1. Information concerning the burning/welding permit is listed below:
   a. The Fermilab Construction Coordinator will contact the Fermilab Fire Department (FFD) and secure the Burn Permit;
   b. Members of the FFD will meet with the Fermilab Construction Coordinator and the Subcontractor's Field Superintendent and examine the proposed operation, prescribe precautions, assure appropriate instructions are understood, and then issue a written Burn Permit;
   c. The Subcontractor must arrange for fire watches during burning, welding, or other fire or spark generating work. This fire watch must continue for a minimum of thirty minutes after work is complete;
   d. It is the Subcontractor's responsibility to furnish the proper number and type of fire extinguishers for any welding, cutting, or brazing activities as specified in the Burn Permit;
   e. The extinguishers must be located in clear sight and no farther than 50 feet from the work areas;
   f. All welding shall be in accordance with the requirements of the American Welding Society (AWS) Standard: Safety in Welding, Cutting, and Allied Process (ANSI/ASC Z49.1-94);
   g. UL or FM listed check valves shall be installed on oxygen-fuel torch cutting equipment

3.2 PRECONSTRUCTION MEETING

A. Preconstruction Meetings may be required for Subcontracts which require bonding. This meeting, chaired by the Fermilab Procurement Administrator, will typically be held after Subcontract award and before Notice to Proceed is issued.

B. The Subcontractor's Project Team is expected to attend this meeting.

3.3 REPORTING REQUIREMENTS

A. The following requirements concern Subcontractor reporting requirements:
   1. Emergencies: All emergencies occurring at the Fermilab site must be reported immediately by dialing extension **3131** from a Fermilab phone or **(630) 840-3131**. The types of emergencies to be reported include: injury or illness requiring emergency care, fire, explosion, security incident, vehicle accident, radiation incident, utility failure, tornado sighting, and hazardous material spill or release;
   2. Non-Emergencies (or All Other Incidents: All incidents, including any injury/illness, any non-emergency incident and near misses must be reported immediately to the Fermilab Construction Coordinator. Fermilab shall determine if the incident scene shall be preserved and secured by the Subcontractor to enable Fermilab and DOE to conduct any necessary investigations. After any necessary emergency response is made, the scene shall be left unchanged and protected until the Fermilab Construction Coordinator is notified and releases the incident site for work to continue; and
   3. Investigation and Reporting: The Subcontractor must investigate all incidents (including near misses). The Subcontractor shall submit, within 48

hours of an incident, a written report of an investigation. The investigation must include root causes, corrective actions and preventive measures.

3.4 SUBCONTRACTOR TRAINING

A. The following requirements concern Subcontractor training:
   1. The Subcontractor shall be responsible for assuring that their employees and sub-tier Subcontractor employees, who do not speak English, understand all ES&H requirements. The Subcontractor must be able to communicate any necessary instructions to those employees;
   2. All Subcontractors performing work at Fermilab shall provide to their employees any necessary ES&H training as may be required by federal/state regulations and as appropriate for their Subcontract activities at Fermilab. Exceptions involve hazards, which are unusual for the trade of the Subcontractor's employees. In particular, Fermilab normally provides appropriate training for Subcontractors working in radiation areas or oxygen deficient hazard areas, and expected emergency response.

B. ES&H training that was provided by the Subcontractor or others and received by Subcontractor employees performing subcontractor activities at Fermilab shall be maintained on-site and available for review by Fermilab.

C. Subcontractors shall maintain on-site and provide to Fermilab upon request, any and all occupational safety and environmental records. Such records include, but are not limited to, the records required to be maintained by federal/state regulation. Such records include OSHA injury/illness logs, training records, inspection records, safety meetings, and incident investigations. Additional records appropriate for the Subcontractor's activities shall also be maintained and provided to Fermilab upon request. Examples include but not limited to:
   1. Excavation
   2. Scaffolding
   3. Fall Protection
   4. Confined Space
   5. Welding
   6. Crane Inspections
   7. NFPA 70E

D. If the Subcontractor intends to administer first aid or Cardio Pulmonary Resuscitation (CPR), the Subcontractor must comply with 29 CFR 1926 and have available the list of names of any employee who will administer first aid or CPR, along with current certifications.

3.5 JOB SITE ES&H INSPECTIONS/MEETINGS

A. After the start of construction and throughout the entire construction period, the Subcontractor shall monitor and inspect the construction area and operations for compliance with the Subcontractor's accepted ES&H and/or CESH plan on a daily basis. The Subcontractor's Project Team is expected to conduct these inspections and correct any deficiencies found.

B. These inspections shall be documented by the Subcontractor and maintained on-site for the duration of the project. Records shall be available for review upon request by Fermilab.

C. The following requirements concern Job Site ES&H meetings:
   1. Daily Work Planning Meetings in the form of daily briefings shall be conducted by the Subcontractor Field Superintendent and attended by all subcontractors on site that day. The daily planning meeting will discuss the planned work activities, review the applicable hazard analysis, and allow for employee questions and feedback regarding the work activity documented on form found on Attachment B;
   2. Weekly Toolbox Meetings of approximately five (5) minutes duration shall be conducted at the job site by the various area/job foreman or superintendents for their specific crafts. These meetings shall emphasize the current construction operations and provide an opportunity for inspection of tools and personal protective equipment.

D. The Subcontractor will document the daily and weekly toolbox meetings (date, topic, attendance, etc.) and provide a copy to Fermilab.

E. The Fermilab Construction Coordinator will be notified of all job site ES&H meetings and may attend.

3.6 PERSONAL PROTECTIVE EQUIPMENT

A. 100% eye, head, and foot protection – All construction workers and other personnel on the construction worksite shall wear at all times eye, head, and foot protection that complies with the applicable ANSI Standards. The type of protective eyewear shall be selected as appropriate for the hazard. Gloves shall be worn when handling sharp objects.

B. The Subcontractor shall furnish personal protective equipment (PPE) as required to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective in reducing hazard exposures. The minimum acceptable PPE for work on the Fermilab site are:
   1. Hard hats shall be furnished by the Subcontractor and shall be worn in the construction work areas as designated in the Hazard Analysis and/or applicable OSHA standards. Personnel working on construction activities or in the field shall also wear hard hats, brim facing forward or full brim style hard hat. Hard hats shall meet the ANSI Z89.1 standard as required by 29 CFR 1926.100 and bear the “Z89.1” designation. High voltage exposure work requires hard hats that meet the ANSI Z89.2 standard and bear the “Z89.2a” designation;
   2. Safety glasses with side shields shall be furnished by the Subcontractor and shall be worn in the construction work areas as designated in the Hazard Analysis and/or applicable OSHA standards. Eye protection must meet the requirements of 29 CFR 1926.102. Safety glasses shall be ANSI approved and shall be marked with the ANSI “Z87.1” designation;
   3. Clothing suitable for the work and weather conditions is required. In construction areas, the minimum shall be short (1/4 length) sleeve shirt, long trousers, and hard sole leatherwork boots providing ankle protection. In

addition, any work that presents a greater hazard to the feet or toes requires the use of safety toed or metatarsal guards, meeting ANSI Z41. Canvas, tennis, or deck shoes are not permitted within the construction work area;

4. Hand protection, such as gloves shall be readily available for the task suited for the hazards on the individual subcontractor's employees and sub-tier employees;
5. All personnel working on construction activities outside and involving heavy equipment in the field shall wear a reflective, high visibility garment, minimum ANSI Class II, as designated in the Hazard Analysis and/or applicable OSHA standards.

3.7 ELECTRICAL WORK

A. The Construction Management Office will determine whether electrical work permits are required.

B. The following sets forth the minimum acceptable requirements for work on electrical systems at Fermilab.
   1. All electrical work shall be performed in accordance with NFPA 70E, Standard for Electrical Safety in the Workplace;
   2. The Subcontractor personnel must be trained in Lockout/Tagout (LOTO) prior to participating in LOTO of hazardous energy sources and working on LOTO systems or equipment;
   3. The Subcontractor shall provide ground fault circuit interrupter protection for electric hand held tools, portable generators, temporary electrical extension cords and other wiring, etc. The assured equipment-grounding program is <u>not</u> an acceptable alternative at Fermilab.

3.8 OXYGEN DEFICIENT HAZARDS

A. Fermilab has policies and procedures governing work in ODH areas. The Fermilab Construction Coordinator will communicate specific requirements and work practices to the Subcontractor.

B. All Subcontractor and Sub-tier contractor personnel who must enter designated ODH areas must have and display a level of medical fitness acceptable to Fermilab prior to entering those areas.

C. Fermilab will assess the need for ODH training for Subcontractor personnel. If ODH training is necessary Fermilab will provide it free of charge.

D. Oxygen monitoring equipment will be supplied to the Subcontractor personnel, as necessary. The Subcontractor is responsible for returning this equipment upon request or upon completion of the work.

E. Fermilab will furnish emergency evacuation equipment. Care, use, and the return of such equipment will be the responsibility of the Subcontractor.

3.9 RADIATION PROTECTION

A. Fermilab has policies and procedures governing radiological work. The Fermilab Construction Coordinator will advise the Subcontractor of the requirements and work practices, if potential for radiation affects the work scope.

B. Fermilab will assess the need for radiological training for Subcontractor personnel. If radiological training is necessary it will be provided free of charge by Fermilab.

C. Radiation dosimeters will be supplied to the Subcontractor personnel, as necessary. The Subcontractor is responsible for returning this equipment upon request or upon completion of the work.

D. Fermilab will furnish protective clothing. Disposal of such clothing will be the responsibility of Fermilab.

E. Prescribed procedures for material handling and segregation shall be followed explicitly. Potentially radioactive material must be surveyed prior to removal from site. The Fermilab Construction Coordinator shall coordinate this survey.

F. The use of industrial radioactive testing sources is subject to monitoring and oversight by Fermilab based on the following:
   1. Nuclear density meters will be inspected at the construction site by Fermilab ES&H personnel. Review for Department of Transportation compliance with survey and inspection requirements will be completed at that time;
   2. When required by specification, Subcontractor use of radiography sources will require five (5) business days advance notice to the Fermilab Construction Coordinator. During this time, the Subcontractor shall submit to the Fermilab Construction Coordinator documentation showing the Subcontractor's Nuclear Regulatory Commission or Agreement State license for the material;
   3. When the source is brought to the Fermilab site, Fermilab ES&H staff will meet the subcontractor, escort him/her to the construction site, and monitor the use of the source during the testing activity;
   4. Any work with radiography will occur outside normal business hours.

3.10 ENVIRONMENTAL PROTECTION

A. All construction work on the Fermilab site shall comply with all applicable environmental executive orders, laws, regulations, and permits. All Subcontractors and sub-subcontractors shall conduct their activities in an environmentally sound manner that limits the risks to the environment and protects the public health. The following sets forth the minimum acceptable requirements for environmental protection at Fermilab:
   1. Refer to Section 1.12 of this document for the Soil Erosion and Sedimentation Control (SESC) requirements for this project;
   2. If required, the Subcontractor shall install all erosion control in accordance with SESC plan prior to the start of excavation activities;
   3. Excavation at or adjacent to streams' tributaries, wetlands, or other surface waters shall be done only after notification to the Fermilab Construction Coordinator;

4. The Fermilab Construction Coordinator will inform the Subcontractor if any wetlands are present in the work area and what protective measures are necessary;
5. Unexpected environmental impacts shall be immediately reported to the Fermilab Construction Coordinator and mitigated by the Subcontractor;
6. Flammable and/or combustible liquids, fuels, and oils shall be provided with containment and shall not be stockpiled beyond one day's usage. Storage of these materials, plus maintenance and fueling areas used by the Subcontractor, shall be properly graded and maintained and shall be located a minimum of 100 feet away from a wetland or water body boundary so that adverse effects on the environment are eliminated;
7. The Subcontractor shall make routine inspections to assure that all motorized equipment is free of leaks of petroleum and other toxic or hazardous materials. The Subcontractor shall keep sufficient cleanup supplies on hand (e.g. oil dry, absorbent booms, etc.) to contain/absorb any spill or leak of fuels, oils, etc. that could potentially leak from their equipment. If a spill or leak should occur, the Subcontractor should immediately take appropriate steps to contain spills, move equipment out of sensitive areas (near wetland or water body) and immediately notify the Fermilab Construction Coordinator;
8. At the close of each workday, the Subcontractor's Field Superintendent shall inspect the complete construction site to insure that all erosion controls, drainage patterns, excavations and staging areas are in environmentally sound condition for the weather conditions anticipated.

3.11 TEMPORARY HEATING DEVICES

A. Open burning, fire barrels, coal or kerosene type salamanders, or open flame heating devices that have exposed fuel below the flame are not allowed on the Fermilab site.

B. Temporary heating devices shall be coordinated through the Fermilab Construction Coordinator

3.12 SMOKING

A. Smoking including electronic smoking devices are prohibited in locations where flammable and/or combustible materials are stored. "No smoking" signs shall be posted in these areas.

B. Smoking including electronic smoking devices are prohibited in all Fermilab buildings except in designated areas.

3.13 FUEL STORAGE TANKS

A. Above ground fuel storage tanks for construction vehicles shall not be permitted on the Fermilab site.

B. Fuel tanks mounted on pick-up trucks shall conform to the requirements of the Illinois State Fire Marshall's Office.

C. Fuel tanks mounted on pick-up trucks shall be removed from the Fermilab site at the end of each workday.

D. Refueling of equipment while the motor is running is prohibited.

E. During refueling from truck-mounted fuel tanks or with portable fuel cans, etc., a 20-pound (minimum) A-B-C dry chemical fire extinguisher must be present.

F. Maintenance and fueling areas used by the Subcontractor shall be properly graded and maintained and shall be located a minimum of 100 feet away from a wetland or water body boundary to avoid adverse effect on the environment.

3.14 EXPLOSIVES

A. The use of explosives is not permitted without prior written approval of Fermilab.

3.15 VEHICLES AND EQUIPMENT

A. The following sets forth the minimum acceptable requirements for vehicles and equipment at Fermilab:
   1. Operators must have an appropriate, valid driver's license when operating vehicles on site. Seat belts are required to be provided and worn for the operators and passengers of all vehicles;
   2. All vehicles and mobile powered equipment, except automobiles and pickup trucks, shall have reverse signal alarms (a.k.a. backup alarms) audible above the surrounding noise level. If backup alarms are not present on the equipment, a spotter (other than the driver of the vehicle) must be present to warn pedestrians and the drivers of other moving equipment;
   3. If required by the equipment manufacturer, roll over protection structures shall be provided;
   4. Personnel lifts must be equipped with audible motion alarms. These alarms must be in operation and audible over the surrounding ambient noise when the lift is in use. Additionally, all lifts require two distinct actions in order to make the lift move in a forward or backward direction or in an upward or downwards direction. A foot pedal is considered one of the actions if independent of the other controls;
   5. The equipment manufacturer must approve any modifications to lifting and hoisting equipment;
   6. All hand and power tools must be checked prior to use on each shift to assure that they are maintained in a safe condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use.

B. Equipment inspection and modification (The subcontractor shall comply with 29 CFR 1926.600, Subpart O):
   1. The Subcontractor must inspect all heavy equipment before use on site, prior to use on each shift, and during use to make sure it is in safe operating condition. Defective equipment shall be removed from service;
   2. The Subcontractor is to assure that regulatory inspection records are complete and up-to-date and that operating manuals are available;
   3. In no case shall the original safety factor of the equipment be reduced.

4. All tools and equipment brought on site by the Subcontractor are subject to inspection by Fermilab. Items found to be damaged or out of compliance shall be repaired or immediately removed from service, and tagged out of service.

3.16 CONCERN REPORTING PROCESS

A. Whistleblower Protection for Subcontractor Employees
   1. The Subcontractor shall comply with the requirements of the "DOE Contractor Employee Protection Program" at 10 CFR Part 708.
   2. The Subcontractor shall insert or have inserted the substance of this clause, including this paragraph (b), in lower tier subcontracts, at all tiers, with respect to work performed on any construction worksite at a DOE-owned or leased facility, as provided for at 10 CFR part 708.
   3. Concern Reporting Processes - Subcontractor employees on the construction worksite are entitled to use any of the means available to communicate concerns about ES&H conditions and practices. Information about concern reporting is available on ES&H bulletin boards throughout Fermilab, and shall be included with Fermilab provided materials for the construction worksite postings for this project. The options for reporting concerns include:
      a. DOE Concern Reporting:
         1) Telephone: (630) 840-3281
         2) Email: EmployeeConcerns@science.doe.gov

3.17 PROJECT BULLETIN BOARD

A. Subcontractor is responsible for installing and maintaining a safety bulletin board at the location where the majority of the subcontractor's employees, sub-subcontractors, and sub-tier vendors report to work. Information shall include:
   1. DOE Worker Safety and Health Poster DOE-F 5480.2 (Worker Rights), furnished by Fermilab. Spanish versions of the DOE Safety and Health Poster are also available from Fermilab upon request.
   2. DOE Occupational Safety and Health Complain Form 5480.4, available on-line.

3.18 JOBSITE SAFEGUARDS

A. The Subcontractor shall be responsible for providing and implementing the necessary precautions to safeguard material and equipment at the project site.

B. In the event of theft or damage to Subcontractor property, Fermilab property, and/or Government property, the Subcontractor shall immediately notify Security Dispatch by telephone (630) 840-3414 and Fermilab Construction Coordinator.

3.19 EMERGENCY EGRESS AND SEVERE WEATHER

A. The following sets forth the minimum acceptable requirements for emergency egress and severe weather protection at Fermilab:
   1. All emergency egress routes shall be kept clear at all times;

2. Severe weather shelter locations and specific evacuation procedures will be provided by the Fermilab Construction Coordinator;
3. The Subcontractor shall communicate egress routes and severe weather shelter to their employees and all sub-subcontractors.

3.20 WORK COMPLETION AND CLEAN UP

A. All work and clean-up operations shall be in compliance with the Subcontractor's ES&H Plan.

B. Requested documentation for all aspects of the ES&H program shall be complete and submitted prior to Subcontract close-out.

END OF SECTION

ATTACHMENT A

GUIDANCE FOR SILICA WORK - if job not on this list contact Fermilab ES&H Coordinator				
Type of Work	**Duration/Scope**	**Location (general)**	**Required Controls***	**Notes**
Grout/mortar mixing	≤ 5 sq ft / ≤ 7 bags	Inside or Outside	D	Keep employees upwind of dust when outdoors.
Grout/mortar mixing	> 5 sq ft / > 7 bags	Inside or Outside	A, C, D	
Shoveling sand	Any	Outside	B	Keep employee upwind of dust when outdoors
Hole drilling ≤ 1/4 in diameter	< 4 holes	Inside or outside		Use vacuum for housekeeping (no sweeping)
Hole drilling ≤ 1/4 in diameter	> 4 holes	Inside or outside	A or B	Use vacuum for housekeeping (no sweeping)
Hole drilling > 1/4 in diameter	Any	Inside or outside	A or B	B only applies to horizontal surfaces
Saw cutting - chop saw	Any	Inside or Outside	B, D	
Saw cutting - hand held saw	< 1 linear ft	Outside	B, D	
Saw cutting - hand held saw	> 1 linear ft	Outside	B,C, D	
Saw cutting - walk behind saw type equipment	Any	Outside	B, D	
Surface finish	Any	Inside or outside	A or B, C, D	
Joint compound sanding	> 1 linear ft	Inside or outside	A, C, D	Some new joint compounds are silica free
Tuck Pointing/Grout repair - Hand tools	Any	Inside or outside	B, D	
Tuck Pointing/Grout repair - Power tools	Any	Inside or outside	A, B, C, D	
Jack Hammering	Any	Outside	B, D	
Concrete Demolition using Heavy Equipment (enclosed cab)	< 4 continuous hours	Outside	B, C	Sprayer must wear respirator or contact IH through Construction Coordinator
Concrete Demolition using Heavy Equipment (enclosed cab)	> 4 continuous hours	Outside	B, C	Sprayer and operator must wear respirator or contact IH through Construction Coordinator
*Controls - NOTE: OTHER PPE WILL BE REQUIRED FOR ADDITIONAL HAZARDS				
A = Local exhaust ventilation on tool or Point of Operation exhaust				
B = water to eliminate visible dust				
C = HEPA filter respirator with face piece scaled for anticipated exposure				
D = First aid flush of eye contamination				

ATTACHMENT B

Daily Work Planning

Project:_____ Work Location: _____
Subcontractor_____ Date: _____

Permits Required

- ☐ None
- ☐ Penetration Permit
- ☐ Excavation Permit
- ☐ Confined Space Entry Permit
- ☐ Hot Work Permit-Fire (flame or sparks)
- ☐ Radiological Work Permit
- ☐ Traffic Control Plan
- ☐ Hoisting and Rigging Plan
- ☐ Electrical Work Plan
- ☐ Energy Isolation Plan
- ☐ Elevated Surface Work Plan
- ☐ Pressure Test Plan
- ☐ Other _____
- ☐ Other _____

Discussion & Review Checklist

- ☐ What activities will be performed today?
- ☐ Are there any modified or different activities or equipment being used today?
- ☐ Do all workers have adequate PPE for working on the site and during their individual activities?
- ☐ Have high-hazard activities been identified and evaluated and have controls been established?
- ☐ Has relevant information from the HA(s) been included in today's work plan and discussion?
- ☐ Do all workers understand Fermilab's safety expectations, including stop work?
- ☐ Is the construction area organized and free of trip hazards and debris?
- ☐ Have all work activities been identified and coordinated between all Sub-subcontractors?
- ☐ Will weather conditions impact safety or any work being performed today?
- ☐ Are there any hazardous waste containers or bins needed for today's work?
- ☐ Are all required permits and plans submitted and approved for today's work?
- ☐ Is access by non-construction personnel to all construction areas controlled?
- ☐ Are all workers qualified for the tasks that they will perform today?
- ☐ Have first aid and emergency resources / procedures been identified?
- ☐ Do all workers understand the entire scope of work that will be performed on site today?
- ☐ Other:_____
- ☐ Other

_____

Required Inspections

- ☐ Excavation / shoring inspection
- ☐ Heavy equipment inspection
- ☐ Fall protection
- ☐ Scaffolding
- ☐ Rigging
- ☐ Other _____
- ☐ Other _____

Notes:

_____

_____

_____

ATTACHMENT B

Tasks for the Day	Potential Hazards	Controls

Attendance Sheet

Name (Print	Initial	Company Name

Competent Subcontractor's Representative: _____ Date: _____

ATTACHMENT C

Construction Environmental, Safety & Health Plan (CESHP)

INSTRUCTIONS

This Construction Environmental, Safety & Health Plan (CESHP) is required for each construction project at DOE's Fermi National Accelerator Laboratory site (Fermilab).

This document is a template for the CESHP designed to assist construction subcontractors in describing project conditions and developing project-specific hazards and controls information. The CESHP template is available in electronic format to facilitate editing.

The prime subcontractor may *either* flow down this requirement to each of its subcontractors; or serve as a control and coordination point, requiring all subcontractors' activities to be conducted under the prime subcontractor's solitary CESHP.

Subcontractors must submit the completed CESHP to the Fermilab Procurement Office, which will distribute the document for review and concurrence by the Fermilab ES&H and Project Management teams prior to work commencing. The CESHP is intended to be a living document, which may be updated as necessary throughout a project as information changes or as the project progresses (e.g. – as additional Task/trade Hazard Analyses are developed, subcontractors added, etc.).

There are three parts to this CESHP template. All of the sections in Part 1 are required to be completed for each construction project, regardless of the size or complexity. All of the sections in Part 2 are required to be completed, but checked and filled in as applicable for the particular project's scope of work. Enter information in all of the fill-in blocks that are applicable. For those that are not applicable, enter "N/A" or other suitable explanation.

An activity Hazard Analysis (HA), Part 3, is required for all projects, regardless of the size, scope or complexity of work. The HA is the heart of the project's safety information, and serves as a work control document. Every project will have at least one definable construction task/trade, and therefore at least one HA. Depending upon the complexity of the project, one or several HAs may need to be completed to reflect the hazards and safety precautions for different job activities. In some cases, HAs may need to be staged, in coordination with the initiation of the various phases of a project.

PART 1 – PROJECT GOVERNANCE / EMERGENCY INFORMATION

Section 1 – Project Description and Emergency Contacts

Fill in the names and telephone numbers of the contact personnel for this particular project. In accordance with Title 10 of the *Code of Federal Regulations*, Part 851 (10 *CFR* 851), the Subcontractor must have a designated on-site safety representative who is knowledgeable of the project's hazards and has the authority to correct unsafe conditions or behavior. This is either the Field Superintendent or a designated Subcontractor's Safety Representative as delineated in Section 010010. Attach the qualifications of your safety representative for this project (see section 9). If you have subcontractors performing work on this project, list their contact information. Update as necessary throughout the project.

Section 2 – Subcontractor Policy Statement

Enter your Company's health and safety policy statement. At minimum, your policy should include:

- Specify if Subcontractor's ES&H Program is required and if a dedicated Subcontractor Safety Representative is required.
- Specify if a Quality Control Plan (Program is required and if a dedicated Quality Control Representative is required.
- Specific statement of intent to comply with Title 29 of the *Code of Federal Regulations*, Part 1910, "General Industry Safety and Health Standards", and Part 1926, "Safety and Health Standards for the Construction Industry"; 10 *CFR* 851, "Worker Safety and Health"; and other applicable codes and standards.
- A statement if occupational exposure monitoring is required and if so, that it complies with 10 CFR 851.
- Specify what occupational (industrial hygiene sampling) monitoring will be observed.

Section 3 – 10 CFR 851 Acknowledgement

Because Fermilab is a Department of Energy site, your company must meet the Department of Energy requirements of Title 10, *Code of Federal Regulations*, Part 851, "Worker Safety and Health Program" (Link to 10 CFR 851). It is your responsibility to ensure you have read and understand the actual regulatory requirements. Specify medical surveillance and qualifications. This may include Occupational exposure monitoring.

Section 4 – Safety Briefings and Inspection

The Subcontractor must conduct periodic safety briefings and inspections, based upon the duration and complexity of the project. Describe the frequency and initiation of safety briefings and inspections on your project at Fermilab.

PART 2 – PROJECT CHARACTERIZATION

Section 5 – Project Characterization

Under 10 CFR 851, all Subcontractors must identify existing and potential workplace hazards and assess the risk of associated workers injury and illness. This section will help to serve as first step in characterizing your project and the associated hazards, and will aid in the development of the HA(s).

List the project's Definable Work Activities: A definable work task/trade is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Add additional lines as necessary to identify all the definable construction activities of your project.

Check all of the Hazards/Activities that apply to your project: The checklist in this section includes those activities which are subject to Fermilab-specific controls beyond what is required by OSHA standards, or have the potential to affect natural resources including storm water, wetlands, streams, air quality, vegetation and wildlife. In the left-hand column, check all activities that will be performed as part of this project. Identify your Competent Person(s) where applicable.

This checklist is presented in part for project planning and scheduling purposes, as some activities require Fermilab-specific permits to be acquired prior to being allowed to perform them. If your project involves a task/trade that has a check in the right-hand column, then your CESHP must include a copy of your company program that addresses the controls and requirements for performing that task/trade at Fermilab. If your company does not have an established program for a particular task/trade, then you may attach a project-specific program/plan for performing that task/trade at Fermilab or address it in sufficient detail in a thorough HA (however, this is not an option for OSHA-required programs). Use Section 9 of this template to list and identify attachments of your company programs, policies, procedures and/or plans. Be specific as to the chapter and/or section being reference.

Project-applicable activities that have potential environmental impacts will require Fermilab ESH&Q coordination and concurrence of Fermilab. The Subcontractor and all lower-tier subcontractors are responsible for implementation and compliance with all federal, state and local laws as well as Fermilab procedures.

Section 6 – Project Support Features, Site Control and Logistics

Discuss important site/project control elements that you will employ on your project such as signs, barricades, fencing, briefings, sign-in/out logs, blocked exits, PPE postings, etc. For large or complex projects, attach a diagram showing: construction areas, laydown areas, staging areas, alternative exit routes, material storage areas, pedestrian routes, traffic control, material receiving areas, etc. Attach a copy of your Logistics Plan if one is required by the contract documents, or if you are providing one to better delineate your site control procedures. Use Section 9 of this template to identify which appendix the Logistics Plan appears in your CESHP.

Section 7 –Required Training/Qualification

Check all boxes applicable to this Project's work scope.

Where specific training is required (e.g. – OSHA mandated), the subcontractor must maintain, on-site, proof of the particular individuals meeting, and being current in, the training requirements.

Identify where you will maintain those records on the Fermilab Site.

Section 8 – Hazard Communication

Hazardous chemicals (as defined in 29 CFR 1910.1200) to be brought or used on-site are to be identified and managed appropriately. The subcontractor is responsible for maintaining an up-to-date chemical inventory (only of those chemicals brought on site), and copies of Globally Harmonized System, Safety Data Sheets (SDS) must be maintained at the task or project support facilities and made available for review by site workers, the DOE or Fermilab employees.

Identify the methods you will use to inform the other employer(s) of any precautionary measures that need to be taken to protect Fermilab and/or other subcontractor employees during normal operating conditions and in foreseeable emergencies.

Identify the methods you will use to inform other affected workers of your labeling system if the labeling system is not readily understandable.

If you're existing Hazard Communication Program addresses these requirements, you may attach a copy of it and your project-specific chemical listing instead of filling out the block in this Section (9).

Section 9 – Plan Attachments

A description of the qualifications (or resume') of all individuals serving as the Designated Safety Representative(s) on this project must be included in the Plan, per 10 CFR 851.

Additionally, if your project involves a hazard/task/trade that has a check in the right-hand column of Section 5, then your CESHP must include a copy of your company's program addressing that topic. Alternatively, your company may submit a project-specific plan/HA that details your approach to addressing that topic. You are responsible for ensuring that your project-specific controls are in alignment with the Fermilab site requirements presented in the Subcontractor's ES&H company program or through specific controls identified in the project HAs.

Use this Section of this template to also list any other plans(s)/procedures you are attaching to this CESHP. Hardcopies and/or an electronic file or hyperlink to these documents must be reference here.

PART 3 – TASK/TRADE HAZARD ANALYSES

10 CFR 851, Appendix A to Part 851 – Worker Safety and Health Functional Areas, Construction Safety requires that an Task/trade Hazard Analysis (HA – sometimes referred to as a Job Hazard Analysis, HA) be prepared for each separately definable construction task/trade (e.g., mobilization, excavations, concrete/foundations, structural steel, roofing) prior to the commencement of work. For larger projects, the primary subcontractor may either flow down this requirement to each of its lower-tier subcontractors, or serve as a single control and coordination point for all project HA's.

Prior to the start of each phase of work, it will be the responsibility of the subcontractor to develop a thorough HA that details the hazards and controls for the steps associated with that phase of work, and submit it to Fermilab Construction Field Office or ESH&Q for review.

If the project's complexity and/or schedule necessitate several HAs to be developed for different phases of the Project, the subcontractor may use the tracking table as a tool to coordinate which HAs are in effect and which HAs are yet to be developed.

The CESHP template is provided in electronic format to enable copy-and-paste functions for those subcontractors whose basic data remains unchanged, yet allow for the work steps, hazard and controls information to be tailored to the particular activities/materials/location of the project at-hand. The HA template rows can be expanded to include additional tasks, or reduced in number to accommodate changes, and to vary the final product to match the relative complexity of the project.

Emergency Assembly Points and Medical Map

A location map showing your authorized occupational medical facility. A copy must also be posted at your project field location. Upon award of the work, contact the Fermilab Construction Coordinator for copies of building evacuation routes and assembly areas to include in your map(s), as needed.

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PART 1

(Project Name)

Construction Environmental, Health & Safety Plan

SECTION 1 - PROJECT DESCRIPTION & EMERGENCY CONTACTS		
Subcontract / Project Number	Enter subcontract and/or task order number	
Project Start / End Dates	Start:	Complete:
Project Location	Enter the work location(s) at Fermilab	
Scope of Work	Enter breakdown and description of work activities	

FOR ALL EMERGENCIES CALL:

Fermilab Emergency Contact number: x3131 - or - (630) 840-3131 from a cell phone.

For all incidents, injuries, property damage, near-misses, work-induced illness or chemical over-exposures, the following personnel MUST be immediately contacted upon scene stabilization, but in all cases within one hour:

Project Personnel	Name	Phone Number(s)	Email
Fermilab Construction Coordinator	Enter name of Construction Coordiantor	Enter number: xxx-xxx-xxxx	Enter: user@domain
Fermilab ES&H Coordinator	Enter the name of Fermilab ESH&Q Point of Contact	Enter number: xxx-xxx-xxxx	Enter: user@domain
OTHER CONTACT INFORMATION			
Subcontractor Project Manager	Enter the name of subcontractor Project Manager	Enter number: xxx-xxx-xxxx	Enter: user@domain
Subcontractor Site Superintendent	Enter the name of subcontractor's Site Superintendent	Enter number: xxx-xxx-xxxx	Enter: user@domain
Subcontractor Health & Safety Representative **	Enter the name of subcontractor health & safety representative	Enter number: xxx-xxx-xxxx	Enter: user@domain

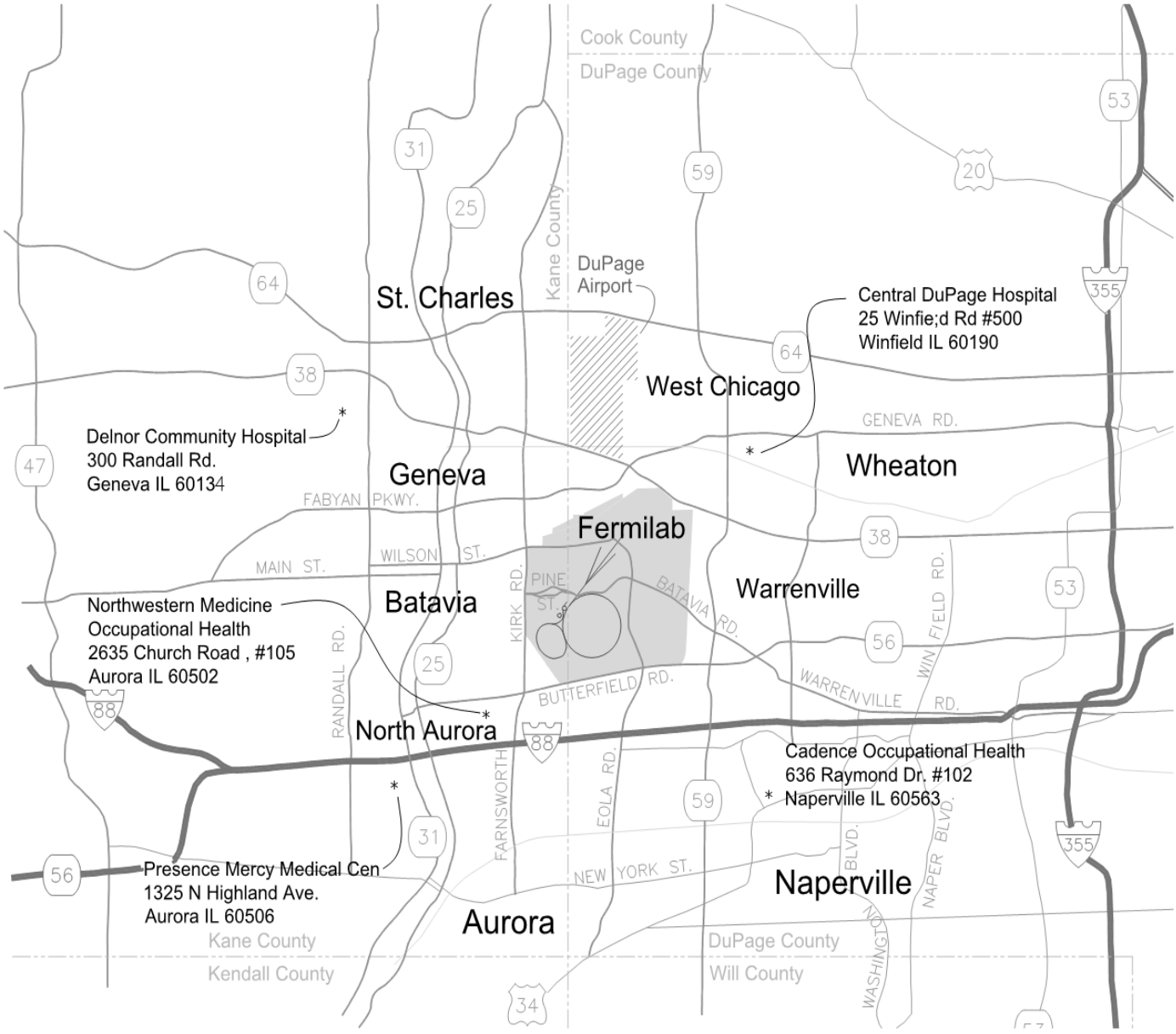
Subcontractors - Company Name	**Name of Designated Safety Representative ****	**Phone Number**
Enter Subcontractor company name	Enter name of individual**	Enter number: xxx-xxx-xxxx
Enter Subtier company name	Enter name of individual**	Enter number: xxx-xxx-xxxx
Enter Subtier company name	Enter name of individual**	Enter number: xxx-xxx-xxxx

***** If required, attach a description of qualifications, or resume', for each Safety Representative per Section 9.0.***

CESHP REVIEWS		
Reviewed & Approved by: (Subcontractor)	**CESHP Reviewed & Accepted by: (Fermilab)**	**CESHP Reviewed & Accepted by: (Fermilab)**
Enter Subcontrator - Company Officer	Enter Fermilab Name	Enter Fermilab Project ESH&Q
Signatures and dates		

A location map and address of the Subcontractor's occupational medical facility Hospital Route is attached to this CESH Plan and posted at the work site.

Fermilab has identified several medical facilities. If the subcontractor would like to use another or different facility, please include map and address location of facility.



SECTION 2a – Subcontractor's ES&H Program		
2a Subcontractor's ES&H Program Required See Section 1.8	☐ Yes	☐ No
2b Dedicated Subcontractor Safety Representative required, see Section 9 of the CESHP for Qualifications	☐ Yes	☐ No

SECTION 2b – Subcontractor's Quality Control Plan (Program) if Section 014100 is required		
2c Subcontractor's Quality Control Plan (Program) Required	☐ Yes	☐ No
2d Dedicated Subcontractor Quality Control Representative required	☐ Yes	☐ No

SECTION 2c - SUBCONTRACTOR POLICY STATEMENT

Enter here the Subcontractor's policy on occupational safety & health (see instructions):

Section 2d - Occupational Exposure Monitoring and Qualifications			
Occupational Exposure Monitoring	Will you be using materials or engaging in an activity that potentially may produce occupational exposures at 10 to 50% of the occupational exposure limits? (e.g., silica, hexavalent chromium, lead, etc.) Reference Section 10 for additional information.	Yes ☐	No ☐
	If yes, you will need to: 1. Comply with 10 CFR 851, Appendix A, Section 6. 2. Provide your industrial hygiene provider contact information.		
Certified Industrial Hygienist (CIH) or IH Technician under the supervision of a CIH.	.Enter the name and address of your company's IH provider for this project		

Section 2e - Industrial Hygiene Sampling		
Yes	No	
☐	☐	Asbestos
☐	☐	Asphalt fumes
☐	☐	Diesel Exhaust
☐	☐	Fiberglass Insulation
☐	☐	Hexavalent Chromium
☐	☐	Lead
☐	☐	Naphtha (Coal Tar)
☐	☐	Noise
☐	☐	Non-Ionizing Radiation
☐	☐	Silica
☐	☐	Solvents
☐	☐	Temperature Extremes (Heat or Cold)
☐	☐	Welding, Cutting & Brazing
☐	☐	Other: (List...)

SECTION 3 - ACKNOWLEDGMENT of 10 CFR 851			
As a subcontractor to FERMILAB, while your workers are physically located at Fermilab you must meet the requirements of Title 10, *Code of Federal Regulations*, "Energy", Part 851, "Worker Safety and Health Program" (10 CFR 851). As such, you must be aware of, and comply with, the requirements of this regulation. (Link to 10 CFR 851)			
Acknowledgment	I, (the author of this CESHP), certify that that I have read the requirements of 10 CFR 851 and attest that my firm and its sub-tier contractors will comply with the requirements of 10 CFR 851.	Yes ☐	No ☐

MEDICAL SURVEILLANCE AND QUALIFICATION			
Occupational Medicine	Will you have any employees that will work on-site at Fermilab for 30, eight-hour days in a 12-month period, or are enrolled for any length of time in a medical or exposure monitoring program required by federal, state, or local regulations (including hearing conservation, respiratory protection, lead exposure)?	Yes ☐	No ☐
	If yes, you will need to: 1. Comply with the occupational medicine requirements of 10 CFR 851, Appendix A 2. Provide your occupational medicine provider contact information		
Clinic / Physician	Enter the name and address of your company's occupational medicine provider for this project	Enter telephone number: xxx-xxx-xxxx	Enter e-mail address: user@domain

Required Medical Surveillance		Task-specific medical testing
☐ DOT/Commercial Vehicle	☐ Blood Lead	List specific task(s) requiring medical surveillance
☐ Hearing Conservation	☐ Respirator User	
☐ Fit For Duty	☐ Other(s) :List other(s)	
☐ Substance Abuse Testing		

SECTION 4 - SAFETY DAILY WORK PLANNING AND INSPECTIONS

Safety Briefings:

Discuss the conduct of safety briefings on your project at Fermilab, See Section 3.6

Safety Inspections:

Discuss your conduct of safety inspections during this project at Fermilab, See Section 3.6

Job Site Orientation:

Discuss how job site orientation, See Section 1.10

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PART 2

(PART 2) SECTION 5 – PROJECT CHARACTERIZATION

Identify the Project's Definable Work Activities.

(e.g., mobilization, excavations, concrete, structural steel erection, dry-walling, electrical install, painting, roofing, landscaping, etc.)

Mobilization (-describe as necessary)	Anticipated Start Date
Enter Task/trade	Anticipated Start Date
Enter Task/trade	Anticipated Start Date
Enter Task/trade	Anticipated Start Date
Enter Task/trade	Anticipated Start Date
Enter Task/trade	Anticipated Start Date
Enter Task/trade	Anticipated Start Date

Check all of the hazards/activities below that apply to this Project..

Yes	No	Hazard/Task/trade with specific Fermilab-based control measures.	Fermilab ES&H 013100	Fermilab-issued Permit required	Attach copy of Subcontractor Program or Project HA addressing this task/trade
☐	☐	Asbestos use, alteration, removal or storage	1.11		✓
		(Identify your Competent Person for Asbestos Work here)			
☐	☐	Blocking Exits or Exit Pathways	3.19		✓
☐	☐	Existing or new structure/Concrete Cutting or Coring (Penetration)	3.1,C	✓	✓
☐	☐	Existing or new concrete grinding, cutting, coring, finishing, tuck pointing mixing, jack hammering & sweeping	1.8,B,2,f,5 & 1.8, & 3,C,2		✓
☐	☐	Confined spaces	1.11 & 3.1,G		✓
☐	☐	Crane Use	1.3 & 3.4,C 6		✓
		(Identify your Lift Supervisor here)			
☐	☐	Discharges to sanitary/septic system will occur	3.1,C	✓	
☐	☐	Energized electrical work (>50 v or > 50 mA)	3.1,C	✓	✓
☐	☐	Excavation	1.11, 1.12, & 3.1,F	✓	✓
		(Identify your Competent Person for Excavations here)			
☐	☐	Earth disturbance of greater than one acre	1.13	✓	

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☐	☐	Explosives	3.14		✓
☐	☐	Falls from elevation (work at heights > 6 feet)	1.11 & 3.4		✓
		(Identify your Fall Protection Equipment Competent Person here)			
☐	☐	Fire protection system outage or modification	1.14	✓	✓
☐	☐	Flushing of (ICW & DWS) waterlines, storm/sanitary lines, fire suppression systems or fire hydrants will be performed	1.14		
☐	☐	Hazardous Waste Storage or generation on construction site	1.18		✓

Yes	No	Hazard/Task/trade with specific Fermilab - based control measures.	Fermilab ES&H 013100)	Fermilab issued Permit required	Attach copy of Subcontractor Program addressing this task/trade
☐	☐	Hoisting/Rigging	1.11C 7		✓
		(Identify your Hoisting/Rigging Competent Person here)			
☐	☐	Hot work (water services)	1.12,B,5	✓	✓
☐	☐	Lasers if greater than Class 3B – See Fermilab Safety Coordinator	1.3,A	✓	✓
☐	☐	Lead concerns	1.18,C		✓
		(Identify your Competent Person for Lead work here)			
☐	☐	Lockout/Tagout (Control of Hazardous Energy)	1.11,D, 1.12, & 3.7		✓
☐	☐	Metals Available for Recycling by Subcontractor	1.18		
☐	☐	Radioactive materials or Ionizing radiation-generating devices	3.9	✓	✓
		(Identify yourRadiation Safety Officer here)			
☐	☐	Scaffolding	1.15, A,7 & 3.4		✓
		(Identify your scaffolding Competent Person here)			
☐	☐	Structural Steel Erection	1.8,C		✓
☐	☐	Traffic Control	1.14		✓
☐	☐	Excavation near Underground Utilities	1.11, 1.12, 1.14, & 3.1	✓	✓
☐	☐	Wetlands, drainage channels, streams, groundwater seeps occur within construction site	1.13		

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PART 2

SECTION 6 - PROJECT SUPPORT FEATURES, SITE CONTROL & LOGISTICS	
Check all of the following facilities and equipment that are required for safe completion of work.	
Facility/Equipment	**Description**
☐ Project Office	Describe office to be used (room/trailer, location, etc.)
☐ Materials Receiving Location	Describe (location, size, delivery times, etc.)
☐ Portable Restrooms/wash stations	Describe (number, location, etc.)
☐ Supplementary Illumination	Describe Supplementary Illumination (Type(s), indoor/outdoor, distribution, etc.)
☐ Emergency Eyewash/Shower	Describe (type, location, distribution, etc.)
☐ First Aid Supplies	Describe (type,size, location,etc.)
☐ Fire Extinguishers	Describe (type,size, location,etc.)
☐ Hazardous Material Storage	Describe (materials, amounts, location, etc.)
☐ Spill Containment/Clean-up	Describe (materials, location, etc.)
☐ Other: Enter Other Type	Describe item, location, number, etc.
☐ Other: Enter Other Type	Describe item, location, number, etc.

Site Control / Logistics	
Task / Location	**Specify your task-specific site control/access control measures below.**
Enter work task and location	Enter specific site/area control procedure
Enter work task and location	Enter specific site/area control procedure
Enter work task and location	Enter specific site/area control procedure
☐ Check here if you are ALSO attaching a Logistics Plan for your activities. Logistics Plan is attached in Appendix #___	

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PART 2

SECTION 7 – REQUIRED TRAINING/QUALIFICATIONS

Training Records Location:
Identify on site location where you will maintain training/certification records related to your Project at Fermilab:

Identify the activities involved on your project which have OSHA-required training:

Yes	No	
☐	☐	Asbestos activities
☐	☐	Aerial Lift Operation
☐	☐	Crane Operation (minimum NCCCO certification for operator)
☐	☐	Confined Space Entry
☐	☐	Electrical Work requiring NFPA 70E provisions
☐	☐	Electrical Work requiring CPR-trained 2nd worker
☐	☐	Excavation
☐	☐	Fall Protection Equipment
☐	☐	Forklift Operation/Powered Industrial Truck Use
☐	☐	Heavy Equipment Operation List equipment to be used:
☐	☐	Ladder Use
☐	☐	Lock-Out/Tag-Out
☐	☐	Noisy Operations requiring Hearing Conservation training
☐	☐	Respiratory protection including medical evaluation
☐	☐	Scaffolding Erection, Use
☐	☐	Other: (List...)

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PART 2

SECTION 8 - HAZARD COMMUNICATION (HAZCOM)

SDS Location:

Identify where you will maintain your Project Chemical list and SDS or MSDSs at Fermilab

Method of notifying affected Fermilab employees:

If the chemicals you will use on the project may affect Fermilab employees or other subcontractor employees, describe the method you will use to notify them. Describe your method of instructing others about your labelling system, if it is nonstandard.

SECTION 9 - PLAN ATTACHMENTS

For each task/trade or hazard checked in Section 5, list and attach your additional corporate, site- or project-specific programs/plans.

Attachment	Reference Procedure or Program
1	Project safety representative, Statement of Qualifications for: (insert name)
#	List Reference Procedure or program
#	List Reference Procedure or program
#	List Reference Procedure or program

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PART 3 – TASK/TRADE HAZARD ANALYSES LOOK
Complete an Task/trade Hazard Analysis for each of your project's Definable Construction Activities
Note: A completed, signed HA must be submitted to Fermilab ESH&Q for review prior to the start of each phase of work, in order to proceed with that phase.

HA Tracking Table (use is non-mandatory unless required by EHS contact)				
1	Enter Task/trade Anticipated Start Date	Responsible subcontractor	HA Submittal Date	Date HA accepted by FERMILAB
2	Enter Task/trade Anticipated Start Date	Responsible subcontractor	HA Submittal Date	Date HA accepted by FERMILAB
3	Enter Task/trade Anticipated Start Date	Responsible subcontractor	HA Submittal Date	Date HA accepted by FERMILAB
4	Enter Task/trade Anticipated Start Date	Responsible subcontractor	HA Submittal Date	Date HA accepted by FERMILAB
5	Enter Task/trade Anticipated Start Date	Responsible subcontractor	HA Submittal Date	Date HA accepted by FERMILAB
6	Enter Task/trade Anticipated Start Date	Responsible subcontractor	HA Submittal Date	Date HA accepted by FERMILAB
etc	(Add others as necessary)			

ATTACHMENT D

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Hazard Analysis

(Project Name)	(Definable Task)

Work Task Strategic Planning	Activities Involving	Needs Special Planning / Permits	Training and/or Competent / Qualified Person Required
Aerial (Boom) Lift	☐	☐	☐
Chemical (M/SDS)	☐	☐	☐
Confined Space	☐	☐	☐
Concrete & finishing			
Crane Operation (minimum NCCCO certification for operator) Heavy Equipment Operation List equipment to be used	☐	☐	☐
Electrical Work requiring NFPA 70E provisions	☐	☐	☐
Electrical Work requiring CPR-trained 2nd worker	☐	☐	☐
Excavation / Trenching	☐	☐	☐
Exposure to falls	☐	☐	☐
Fall Protection Equipment	☐	☐	☐
Forklift Operation/Powered Industrial Truck Use	☐	☐	☐
Ladder Use	☐	☐	☐
Lock-Out/Tag-Out	☐	☐	☐
Noisy Operations requiring Hearing Conservation training	☐	☐	☐
Potential Environmental Impact	☐	☐	☐
Respiratory protection including medical evaluation	☐	☐	☐
Scaffolding Erection, Use	☐	☐	☐
Scissor Lift	☐	☐	☐
Welding/Spark Producing	☐	☐	☐
Other:	☐	☐	☐
Other:	☐	☐	☐

Unique PPE	Required
Cutting Goggles	☐
Face Shield	☐
Leather/Kevlar Chaps	☐
Respiratory Protection	☐
Toe/Foot/ Guards	☐
Ear Plugs / Muffs	☐
Welding Hood	☐
Welding Leathers	☐
Fall Harness	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐
Other PPE _____	☐

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Drawings Attached: ☐ Yes ☐ No

Definable Work Task/trade: **Enter Task/trade Title**		Revision: **Enter Date**
Specific Work Task	**Potential Hazard(s)**	**Control Measure(s),**

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Task/trade Hazard Analysis REVIEWS		
Prepared by: (Subcontractor/Sub-Tier Contractor)	**Reviewed by: (Subcontractor)**	**Approved by: (Fermilab)**
Enter name of Subcontractor - Project Manager *Signature and date*	Enter name of Subcontractor: Project Superintendent *Signature and date*	Enter name of Fermilab Safety Representative *Signature and date*
All signature blocks completed indicates authorization to perform THIS work.		

HA REVIEW/PRE-JOB BRIEF ATTENDANCE ROSTER	
By signing below, I agree to the following: ▪ I agree to follow the work steps and implement the controls as written. ▪ I agree to stop work when conditions or hazards change or when I encounter unexpected conditions during the execution of work, or when work cannot be performed as written, or instructions become unclear during execution. ▪ I confirm that I am authorized, qualified and fit to perform the work.	
Worker (Print /Sign / Date)	Worker (Print /Sign / Date)
Worker (Print /Sign / Date)	Worker (Print /Sign / Date)
Worker (Print /Sign / Date)	Worker (Print /Sign / Date)
Worker (Print /Sign / Date)	Worker (Print /Sign / Date)
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